
ANNUAL REPORTS
FOR
YELLOWSTONE NATIONAL PARK

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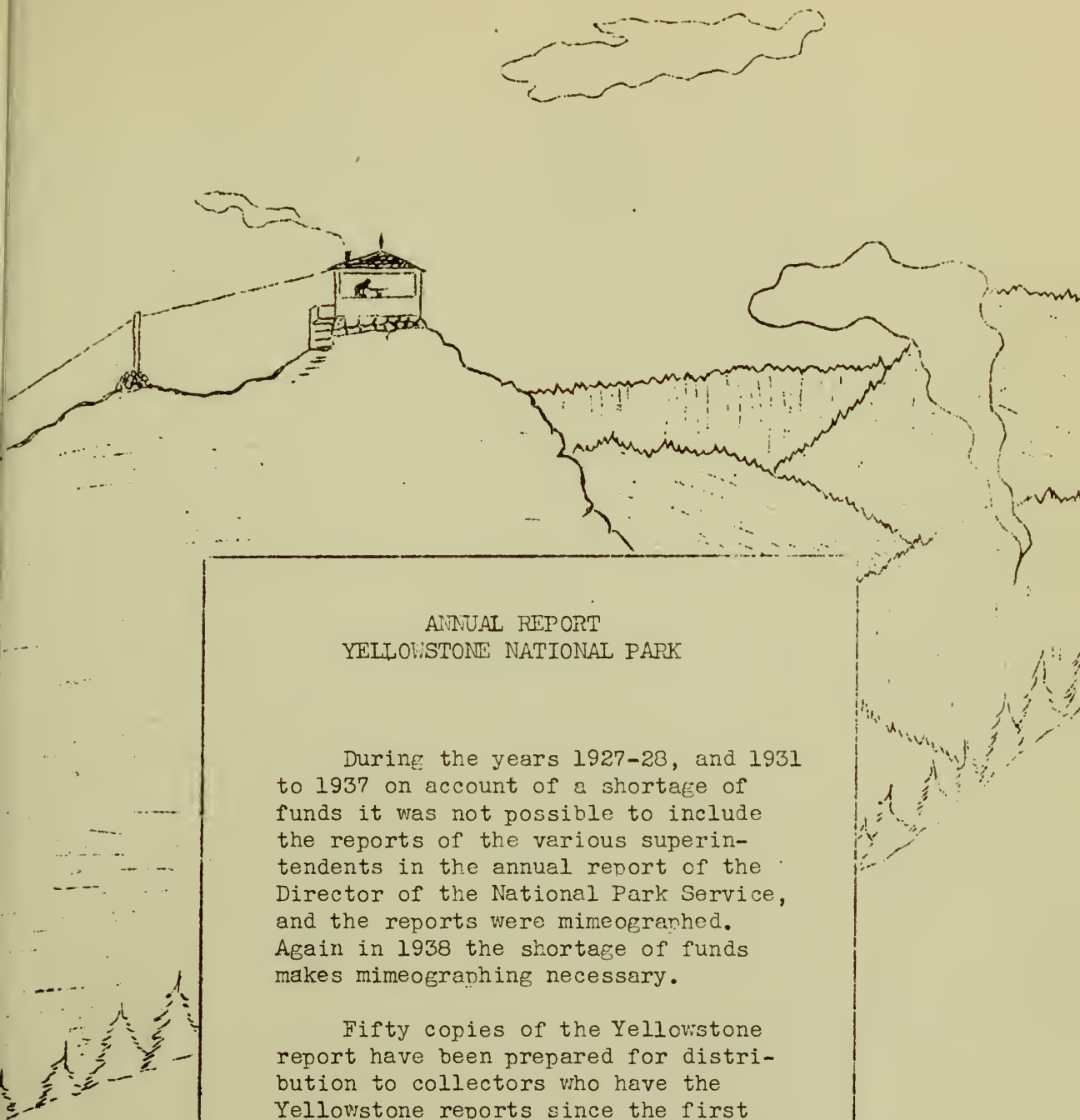
ANNUAL REPORTS
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ANNUAL REPORT
FOR
YELLOWSTONE NATIONAL PARK
1938



ANNUAL REPORT YELLOWSTONE NATIONAL PARK

During the years 1927-28, and 1931 to 1937 on account of a shortage of funds it was not possible to include the reports of the various superintendents in the annual report of the Director of the National Park Service, and the reports were mimeographed. Again in 1938 the shortage of funds makes mimeographing necessary.

Fifty copies of the Yellowstone report have been prepared for distribution to collectors who have the Yellowstone reports since the first issue, and to others who are interested in having copies for reference purposes.

The illustrations in this issue are the work of Park Ranger Gerald P. Yetter.

Edmund B. Rogers
Superintendent

Highway conditions were generally good throughout the season and every effort was made by the contractors and the Bureau of Public Roads officials in avoiding interference with travel. With most of the highways now graded to modern standards the interference with traffic and inconvenience to motorists has been greatly reduced and very few complaints were received regarding highway conditions. The contractor on the Isa Lake-West Thumb project continued work until October 27 and as soon as this road was opened to travel again in June it was suitable to accommodate two-way traffic. A most noticeable improvement in the highway system is the work which has been done around park headquarters, the contractor on this project having worked throughout almost the entire winter. At the end of the fiscal year only three project contracts were under way in the park, the Isa Lake-West Thumb grading, two bridges over the Gibbon River and the Mammoth beautification project. A contract was let in June for improving the section on the east entrance road from Holm Lodge to the east gate.

Even though the weather was extremely dry throughout the summer and a serious fire hazard existed throughout most of each summer month, only 41 forest fires were reported and suppressed with the total acreage burned being less than 6 acres. This was a remarkable record for the fire protection and suppression organization. The previous season recorded 59 fires, 49 of which were Class "A", 9 as Class "B" and 1 was reported as a false alarm. The total acreage burned in 1936 amounted to but 27 acres. The fire hazard was not great during June due to the heavy precipitation which the park received in May and June.

Several road projects, construction of the Post Office building and the improvement undertaken by the operators afforded a great deal of employment during the 1937 season. Work on the Mammoth cabin group continued throughout almost the entire winter as did the work on the Mammoth beautification project. The recreation room in connection with the Mammoth Hotel was completed during July of 1937 and opened to the public, while some of the cabins in the new Mammoth group were ready for occupancy when the Mammoth Hotel opened about the middle of June. The new bunkhouse at Mammoth constructed by the Yellowstone Park Company was ready for occupancy in June, 1938 and completion of the messhouse was expected the early part of July. Due to the delay in the passage of the 1938 Interior Department Appropriation Bill, the employment of a large number of men by the Government was somewhat retarded and it was not until the appropriations became effective that the forces could be operated normally. While the National Reemployment Service operated its office at Mammoth through the 1937 season, closing down on September 23, its work was considerably reduced due to the few going contracts and it was doubtful if the offices would be opened again in 1938. However, the office was again opened in the spring of 1938, with Harold Mitchell in charge, and immediately took care of the demands of the contractors then operating in the park. The critical condition of the park's finances in September resulted in the release of practically every per diem employee on the Government payrolls by the end of that month and the return of a great number of men to the unemployment rolls.

The business of the operators during the 1937 season approximated 1 increase in travel and every operator showed a substantial profit for the year. Practically every night throughout July and August the accommodations at all locations were taxed, especially in the housekeeping units at Old Faithful, Fishing Bridge, and Canyon where all accommodations were disposed of before five or six o'clock each evening. The lodges at Old Faithful Canyon were practically full each evening while Lake Lodge also proved popular. The new Grill in connection with the Mammoth layout was particularly well patronized and offered a fine service. A number of complaints were received throughout the summer especially with regard to unavailability of housekeeping cabin accommodations and the rates for lodgings and for food. However, despite the fact that the operators took care of more people than in any previous year the complaints were perhaps no larger than in some years.

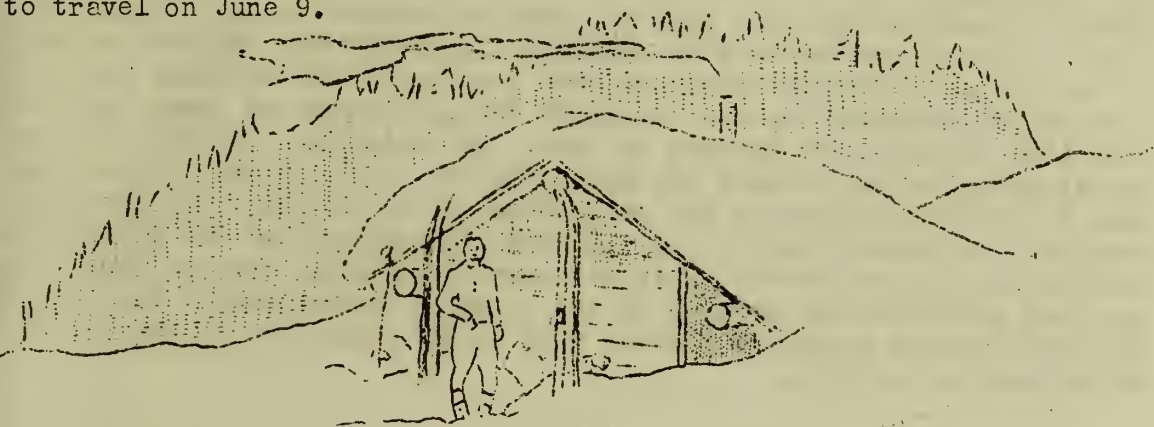
On May 15 the 1938 season officially got under way with the beginning of the collection of the \$3.00 motor vehicle license fee although motorists had been permitted to enter at the north and west gates before the first of May. C. A. Hamilton provided meals and lodgings at his Old Faithful Store from the first of May until May 25 when the cabins and cafeteria opened and at the Lake store from the 6th to the 25th of May. On May 25 the cabins and cafeterias at Old Faithful, Lake and Canyon were opened and the cabins at Mammoth, while meals at Mammoth were obtainable in the Pryor Coffee Shop. On June 13 the lodges at the four main points were opened to accommodate visitors while Camp Roosevelt opened on the 15th and the Thumb on the 28th. On June 15 the hotels and a few of the Mammoth cabins were opened to take care of the first rail visitors for the season. These first rail visitors consisted of several parties of Shriners returning from the Los Angeles convention. The new Mammoth recreation hall was officially dedicated on June 25.

Despite the cold rainy and disagreeable weather and exceeding the expectations of even the most optimistic regarding travel, when the travel figures were computed at the end of the fiscal year, they showed an increase of 1.8% over the same time last year which was an encouraging indication of another very successful season. However, it is doubtful if last season's record-breaking mark of 499,242 visitors will be surpassed.

Fishing was good in the park throughout most of the season, particularly July and the early part of August, and a total of 135,654 fish were reported taken by park visitors as compared with 120,984 for the previous season. All waters in the park were closed to fishing on September 26 due to the critical condition of the park's finances and the necessity for curtailing the park's forces. Fishing in the Yellowstone River from the mouth of the Lamar River to Gardiner opened again on May 1, while the fishing season for 1938 officially opened on May 23. Most of the streams and lakes were high and muddy up to the end of the fiscal year and some of the lakes were still frozen over in June. Fishing from Fishing Bridge and the Yellowstone River from the Bridge to the Upper Falls was not to be permitted until July 1.

While motorists were permitted to enter the park until November 20, with accommodations available at the C. A. Hamilton Store at Lake until October 28 and Old Faithful throughout October, the Lake Hotel closed on September 1 while the Canyon, Old Faithful, and Mammoth Hotels closed on September 12. Mammoth Lodge closed on September 8, while the lodges at Old Faithful, Lake and Canyon closed September 11. Camp Roosevelt closed September 7, September 9 was the last day on which rail visitors could start their park tour. The Thumb cafeteria closed on September 9, Mammoth cafeteria on the tenth and the other cafeterias, except Fishing Bridge which was kept open until September 25 because of the President's visit, remained open until September 20. The cabins in the park remained open until the 20th, after which date accommodations were provided at the C. A. Hamilton Stores at Old Faithful and Lake. On November 15 the Red Lodge-Cooke road was closed definitely to travel, having been closed several times previously and reopened, while the east, south and Gallatin roads became slippery and dangerous due to the storm about that time. The snow and cold weather of November 16 and 17 closed the east and south entrance roads and Dunraven Pass and on the 20th word was sent out that all roads in the park, except the section from Gardiner to Mammoth which remained open throughout the winter, were closed to travel.

On April 1, 1938 the park's two snowplows had completed the opening of the road from Mammoth to Cooke. By April 15 the road was opened to West Yellowstone and on the 18th to Old Faithful. The plows reached Canyon on the 27th and it was not until May 2 that the road was cleared to Lake. The east entrance was opened to admit travel on May 25 while the south entrance was opened on June 2. On June 7 the Dunraven Pass road was opened to traffic but it was not until the 16th that travel was permitted over the Old Faithful-West Thumb road, the last section of the Grand Loop system to open. Travel was permitted in both directions over this highway which was the first time that two-way travel had been permitted over it since it was first used by automobiles in 1915. The opening of this section to two-way traffic makes all of the Grand Loop system traversable in both directions and leaves only Mt. Washburn a one-way road. Travel had not been permitted over the Mt. Washburn road by the end of June but was expected to open July 1. The last of the entrance roads, the Red Lodge-Cooke highway into the northeast gateway was opened to travel on June 9.



On the first day the President proceeded from Gardiner to Mammoth, thence to Norris, to Canyon and to Fishing Bridge returning to Mammoth the night via Dunraven Pass. Stops were made at a number of the main points of interest and for bears, several of which were seen along the highways. The party also saw antelope, deer, elk, and buffalo but no moose or mountain sheep. That evening a national broadcast over the Columbia and National hookups was made and while the President himself did not speak Mrs. Roosevelt and Mrs. Boettiger were on the air. The following day, which was Sunday, the party left Mammoth for Old Faithful and West Yellowstone. Daisy and Old Faithful Geysers were seen in action and several bears and a number of elk were observed along the highways. The party departed by train from West Yellowstone that evening. Throughout the two days there was not a single accident to mar the pleasure of the trip and everything went off as planned.

A bad condition in the park's finances resulted from the delay in the passage of the 1938 Interior Department appropriation bill, which was not passed until August 10, and the non-receipt until early September of the outline of work which included a general 10% reduction in appropriations demanded by the President. By September the figures showed a comparatively small balance to work on for the remainder of the fiscal year and it was necessary to take drastic action to reduce expenses so that by the end of September practically every per diem employee had been released. Because of the serious condition of the park's finances the Director ordered the closing of the park to all travel effective at the close of business September 25. This announcement caused considerable concern throughout the western states affected by Yellowstone travel and vigorous protests were lodged by civic organizations, newspapers and members of Congress in an effort to keep the gates open. On September 20 there was formed in Livingston, Montana the Tri-State Yellowstone Civic Association including the states of Wyoming, Montana and Idaho, to protest to the President the closing of the park's gates and to further travel in the future and to look after the park's interests. Bitter editorials against the closing were carried in many western newspapers and the action of closing caused much criticism of the National Park Service and the Administration. Following the visit of the President on September 25 and 26, the Secretary of the Interior, at the request of the President, authorized the continuance of the opening for an additional two weeks unless sooner closed by snow and ordered that the park be operated at the minimum of expense. Fishing was definitely closed on September 26. At the expiration of the two weeks further authority was received to discontinue the collection of the entrance fee but to permit the park roads to remain open until such time as they were blocked by snow. The collection of the entrance fee was discontinued on October 12, which was the earliest date in many years that the discontinuance of the collection of the entrance fee was made effective. On March 5 advice was received that \$38,500 of the Yellowstone reserve had been released. This was very encouraging for the park's operation and permitted the opening of the roads at approximately the same time as last year and permitted certain work to be resumed which had been curtailed during the fall.

There were no complete records kept of the number of trailer houses which entered the park this season but a survey made during the month of August, which included all trailers entering the park, recorded 777 parties using this type of transportation and camping facilities as compared with 471 trailer houses which were recorded during a similar survey in August, 1936. Casual observations in automobile campgrounds and along the highway indicate that the percentage of increase in trailer houses for the travel season is about that represented in the records from the August survey. Interesting statistical data collected from the survey showed 2,749 people using the 777 trailer houses or an average of 3.53 per trailer; that the average number of days spent in the park was 7.23; that the average cost of the trailers was \$691.63 and that the trailers traveled an average of 260.76 miles per day. Only 32 of the 777 trailers were not wired for electricity.

The 1937 season marked the third year that park visitors have been able to travel directly to one of the park entrances by air. On August 1 the Western Air Express announced the merger of its line with the National Park Airways which latter line had been serving the park during the past two years. The new combined lines now furnish service from San Diego to Los Angeles to Salt Lake City to West Yellowstone to Great Falls and includes enroute Yellowstone, Glacier, Boulder Dam, Grand Canyon, Cedar Breaks and Zion. The new company operated regularly scheduled flights over Yellowstone and Grand Teton National Park from West Yellowstone. During the 1937 season the company reported their planes transporting 287 passengers on the scheduled scenic air tour over Yellowstone and Grand Teton National Parks as compared with approximately 850 reported last year. Three hundred sixty visitors were flown to West Yellowstone and 380 air passengers departed from the West Yellowstone airport. The air travel into West Yellowstone was discontinued on September 15 and was begun again on June 15, 1938. For the 1938 season the flights over the Yellowstone and Grand Teton National Parks are scheduled for Saturdays and Sundays only.

Climaxing the Yellowstone record travel year President Franklin D. Roosevelt spent two enjoyable days in the park on September 25 and 26. Included in the President's party which arrived by train at the north entrance on September 25, were Mrs. Roosevelt, Marvin McIntyre, Secretary to the President; Col. E. M. Watson, Personal Aide; Dr. R. E. McIntire, Personal Physician; Secretaries Kannee, LeHand, Schieder, Tully and Barrows; Miss Nancy Cook, friend of Mrs. Roosevelt; Col. F. C. Harrington, WPA; Roger H. Hinckley, Assistant to Mr. Harrington; one Postal Inspector, 16 members of the Secret Service; 23 newspaper men; 4 broadcasting men; 8 photographers; 3 Western Union and 1 Postal operators; 3 American Railway Express representatives; 1 valet; and a representative of the New York Central Railroad in charge of transportation. Mr. and Mrs. John Boettiger and their two children joined the party at Mammoth on the evening of the twenty-fifth.

ANNUAL REPORT OF YELLOWSTONE NATIONAL PARK

- 1938 -

Edmund B. Rogers, Superintendent

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GENERAL

Up to 1934 the reports of the Superintendent of Yellowstone National Park have covered the construction season and included the period from October 1 to September 30. The 1934 report covered the period from October 1, 1933 to June 30, 1934 and succeeding reports are expected to cover the fiscal year periods. This report, therefore, for 1938 covers the fiscal year July 1, 1937 to June 30, 1938.

All previous park travel records were shattered when, at the end of September, the final figures for the travel year showed an increase of 15.4% over the previous record year 1936. Only 758 people less than a half million, 499,242, came in at the five gateways during the season as compared with 432,570 who entered in 1936. This unprecedented travel began early in the season and the percentage of increase mounted as the season advanced. Of the grand total of 499,242 visitors, 478,716 came by automobile or other private transportation, while 20,526 arrived by train and airplane. One hundred twenty-six thousand three hundred eighty first entry automobiles were recorded as against 108,809 first-entry automobiles in 1936. The new northeast entrance from Cooke lead in the largest percentage of increase of any gateway, there having entered via that portal 35 more people than in 1936. The south entrance was second with an increase of 21.6%, the east third with 16%, the west fourth with 13.1% and the north entrance last with 2.2%. The travel figures this year were carried through to include September 30, the closing date for the travel year, which was the same date used in 1936.

Visitors traveling by rail were registered from every state in the Union, Alaska and 37 foreign countries while automobile visitors were registered from all of the states and from 27 territories and foreign countries. In the rail travel Illinois lead with 2,887, New York second with 2,818, Ohio third with 1,695 and Pennsylvania fourth with 1,661. In the automobile travel, Montana ranked first with 47,160 motorists in 13,809 cars. California was second with 40,088 visitors in 13,869 cars. Illinois came third with 31,591 visitors in 9,585 cars and Idaho fourth with 23,900 visitors in 6,452 cars. The greatest single day's travel was recorded on July 4 when 12,447 people and 3,330 motor vehicles entered the park. This was slightly below the all-time record for daily travel which was recorded on July 4, 1936, as 13,141 visitors and 3,459 motor vehicles.

the approaches to the bridge has eliminated a serious traffic hazard.

The Gardiner checking station which was destroyed by fire on March 4, 1937 and for which there was appropriated \$940.00 for its reconstruction was rebuilt and re-opened for use on August 10.

Considerable excitement occurred in the park on August 14 when Howard Woodward, 20, of Mason City, Iowa, an employee of the Haynes Picture Shops, was injured while climbing Electric Peak. His companion, unable to bring him back alone, returned to Mammoth for assistance and three rescue parties were sent out to locate and bring in the injured victim. After searching all night, one of the rescue parties located Woodward early the next morning and proceeded with him to the Mammoth hospital where he recovered after a stay of some two weeks.

One of the worst catastrophes to hit the neighborhood of the park occurred on August 21 during a fire in the Blackwater Creek Canyon in the Shoshone National Forest, several miles outside and east of the park. A CCC crew of 50 men from the Lake camp in the park under the leadership of Roger Wolcott, Acting Superintendent of the camp, had been assisting in suppressing the fire. This crew had come out from the fire area just prior to a relief crew which was trapped therein. Many of the men, which included Forest Service rangers, Bureau of Public Roads employees, and CCC enrollees, were unable to get out alive and a number were seriously burned. The holocaust was responsible for 15 lives while 22 men were seriously burned, needing hospitalization, and a number of others received slight burns. The cause of the fire was attributed to lightning which struck in an isolated canyon.

The Mammoth school opened its fall semester on September 7 with Miss H. May White and Miss Bernadette Brown as teachers. Due to the large number of children in the community, it was necessary this year for the first time to have two teachers to conduct the classes. The lodge room in the Canteen building was prepared as an additional school room. The school opened with 32 pupils. May 27 marked the close of the school year.

The regular annual meeting of the Yellowstone Library and Museum Association was held in the museum office on October 20. Joe Joffe was reelected Chairman of the Board of Directors and Messrs. J. W. Emmert and W. E. Kearns were reelected as directors, their terms having expired at this meeting. A special meeting of the Association was held on May 27 to discuss several matters needing immediate attention.

Dr. Paul L. Gailmard who was the resident physician in the park for the park medical officer, G. A. Windsor, since August, 1936, severed his connections as such and departed on December 20 for California. The medical contract of Dr. Windsor was extended for one year from December 31, 1938 pending the preparation of a new medical contract. Dr. R. E. Fallis of Chicago, Illinois was appointed as successor to Dr. Gailmard and re-

ingston, killing Mr. Lehrkind and seriously wounding Mr. Schustrum, who died the following day. Mr. Hellesmark and Mr. Stewart were injured quite severely but recovered, while Mr. Adams was hurt the least of the five men. Mr. Schustrum was president of the Livingston Chamber of Commerce and the Tri-State-Yellowstone Civic Association and had always been very friendly and cooperative with park officials and had assisted in many park matters. He was buried in Livingston on the 13th. Mr. Lehrkind, who operated the Park Bottling Works and who did considerable business in the park, was buried in Livingston the previous day.

George Bird Grinnell, author, naturalist, explorer, and "father of American conservation" died at his home in New York City on April 11 at the age of 89 after failing health for several months. Dr. Grinnell was associated with the early history of the Yellowstone and was one of its leading supporters. He led the movement which resulted in the enactment by Congress of legislation protecting the wildlife of the park.

A serious windstorm, similar to the one of July 7, 1936, occurred on July 23, 1937 resulting in considerable damage in the Fishing Bridge Area. Two children, Jimmie Lee Harding and Doll Harding of Eden, Idaho were injured and rushed to the hospital at Mammoth. Both received head injuries but recovered sufficiently to be removed to their home within a few days. One automobile, one trailer, and some 17 cabins were badly damaged, while between 150 and 200 trees were uprooted or blown down.

On the evening of July 15, several employees of the Old Faithful cafeteria attempted a strike. Superintendent Rogers who happened to be at Old Faithful listened to the case and explained their rights and the rights of the operators. After a general discussion the men returned to their work and nothing further was heard from their action.

The park received a vast amount of excellent publicity through the summer and winter, both from pictures and news articles, and particular during the visit of President Roosevelt. The publicity work during the 1937 season was directed by Siegfried Michelson of the University of Minnesota, while the picture publicity, the funds for which were subscribed by the park operators and the several railroads serving the park, was handled by Melvin Ruder of the University of North Dakota. Mr. Michelson was reemployed for the 1938 season but due to the failure to subscribe funds for the picture publicity this service was abandoned in 1938.

The old landmark, Fishing Bridge, passed into oblivion with the completion of the new Fishing Bridge. The new structure was opened to permit travel on August 1 and immediately thereafter the razing of the old Fishing Bridge was begun. Within a couple of weeks there was no sign of what was once the famous Fishing Bridge, but the new structure has proved even more popular because of its providing ample room for the angler without interference by the motorist. The new bridge has considerably improved the appearance of the Fishing Bridge area and the improvement of

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Oklahoma. Walker and Virgil Ross, 28, of Basin, Wyoming were fishing from a canoe about midnight when the boat capsized, throwing both men into the water. Ross succeeded in reaching shore by hanging onto the boat but Walker who tried to swim ashore was drowned.

The year records the passing of several former employees, and park friends. On October 7 Howard Sherman, 32, formerly employed as a clerk with the Park Service in the Yellowstone and later transferred to Grand Teton and then to Wind Cave National Park, committed suicide by shooting himself in the Wind Cave National Park office.

For the third time during the year 1937 death visited the home of Master Mechanic and Mrs. R. R. Robinson, Jr. with the passing of Mrs. Robinson's father, Leroy Hill. Mrs. Robinson's mother, Mrs. Leroy Hill, died in the Park Hospital in Livingston on January 26, 1937 and on November 15, 1937 the Robinsons lost their 13-year old son, "Pud" through accidental shooting. Leroy Hill was born on October 25, 1868 and served 38 years of his life in the service of Uncle Sam. In 1902 he was appointed as chief clerk with the corps of engineers in the park. He served with the engineering corps until 1918 when he was transferred to the National Park Service. He served as Assistant Superintendent from 1922 to August 16, 1927 when he was changed to disbursing clerk because of his health. He retired from service due to disability on May 1, 1931 and from that time until the death of his wife lived in Livingston, Montana. He was stricken with a heart attack while on a trip to Utah and died peacefully on December 27 at the Robinson home. His funeral services were held in Livingston on December 30 and interment was in the Mountain View Cemetery there. Messrs. Emmert, Joffe, Elliott, Ebert, Seasholtz and Oberhansley of the park force, in uniform, acted as pall bearers.

On January 10 the country was shocked to learn of an airplane disaster in the Bridger Canyon, about 13 miles northeast of Bozeman, Montana, which resulted in the death of ten persons including Al Croonquist, who for many years had been a close friend and booster of the park. Mr. Croonquist, upon the formation of the Dude Ranchers Association in 1924, served as its first vice-president and later as executive secretary and resigned a couple of years ago to accept a position as representative for the Northwest Air Lines in Billings.

Robert C. Reamer, 65, the architect for the Old Faithful Inn, Canyon Hotel and now Mammoth development, died at his home in Seattle, Washington on January 7, 1938. Mr. Reamer visited the park frequently and for many years handled the architectural problems of the Yellowstone Park Company.

On the night of April 9, while returning by car to their homes in Livingston following attendance at a meeting of the Gardiner Commercial Club, William Schustrum, Henry Lehrkind, William Stewart, J. S. Hellesmark, and Frank Adams, all Livingston business men, met with an accident when their car turned over several times on a curve some 30 miles south of Liv-

Work continued on the new Mammoth post office throughout the summer and fall of 1937 and it was completed and accepted from the contractor December 30 and turned over to the Postmaster, Claude Anthony. This building cost approximately \$85,000. Siegfus Brothers of Salt Lake City, Utah was the original contractor on the project. It was necessary for the building company to take over the completion of the project due to unsatisfactory work and a contract for the completion was let to Coomer & Small of Sioux City, Iowa who finished the job. The new post office is a fine addition to the Mammoth structures and affords a decided improvement over the old post office for serving park visitors and park personnel. This new structure was opened for business on January 18 and is the third of the buildings to be erected by the Government at headquarters, the apartment house being first and the utility building next. The walls of the lobby are faced with travertine from the travertine mines above Gardiner while the building is of steel concrete and native rock structure and is modern in every respect.

As is the case each year several serious accidents occurred, two during the first month of the new fiscal year. Wilfred Karls of Moulton, Montana lost his life through drowning in the Old Faithful swimming pool on the evening of July 7, while Albert H. Curtin of Grand Island, Nebraska, employee of the Norris Construction Company, was killed on the same day when his truck overturned near Mud Geyser. The month of August saw four deaths, the first on August 2 when Conrad Hreha, a Los Angeles policeman was seriously injured in an automobile accident between Lake and West Thumb and three other persons in Mr. Hreha's car were injured. Mr. Hreha died at the Park Hospital in Livingston two days later. On August 3 Joe Richard, an employee of James Crick, the contractor on the Isa Lake-West Thumb project, was seriously injured when he backed his truck over an embankment while hauling dirt. He died in Livingston the following day. The second drowning accident for the season occurred at the C. A. Hamilton pool on August 25. The unfortunate victim was Kenneth Chandler, 12, of West Yellowstone who was swimming in the pool with several of his companions. On the 29th of August Fred W. Gonder of Livingston, Montana was found dead in the Lamar River near its junction with Soda Butte Creek. He evidently died while attempting to cross the stream, apparently being the victim of a heart attack.

On November 15, Robert Leroy "Pud" Robinson, son of Master Mechanic and Mrs. R. R. Robinson, Jr., was accidentally killed by the discharge of a 22 calibre rifle at his parents' home at Mammoth. Death was almost instantaneous and so far as could be determined, the cause was purely accidental. He was buried in Livingston.

A second member of the park family met death when on January 9 Judge M. Rhoads, 31, Park Ranger, committed suicide by shooting himself in the West Yellowstone ranger station. He was buried in Covelo, California, his home, on January 16.

The first serious accident of the 1938 season occurred on June 5 which resulted in the drowning in Squaw Lake of James Walker of Wheelless

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ported to the park on January 14 to take over his new duties. Dr. Fallis has proven very popular with the members of the Mammoth community and employees and appears well qualified and capable to handle the local resident physician position.

On December 28 the road to the Buffalo Ranch was opened in connection with the work incident to the reduction of the buffalo herd and travel was permitted over it. The general public was invited to visit the ranch and observe and photograph the activities connected with cutting out, handling and crating buffalo. Some 150 persons visited the ranch for the occasion. In order to encourage winter sports and to acquaint the people with the spectacular wildlife show which the park affords in winter, persons living nearby the park were invited to visit it again on January 2. Some 250 persons from nearby communities made the trip to Tower Falls to where the road had been plowed out. A similar invitation which included the town of Cody was extended for such an occasion of January 23 and despite bad weather some 88 persons made the long jaunt from Cody, via Laurel and Livingston, Montana, 250 miles away. Because of the necessity for re-opening the road on February 24 and 25, an invitation was again extended to visitors to come to the park to see the wildlife show and to participate in winter sports in that area. On Sunday, February 27, there were checked in at the north gate 125 cars and over 500 people. Several hundred buffalo were at the ranch and in the horseshoe area between the ranch and Tower Falls. With the opening of the road seven miles beyond Tower Falls Junction toward Canyon in April a popular ski field was selected close to the road on the northern slope of Mt. Washburn. The public was invited to participate in down-hill skiing in that area on April 24 and the event was advertised by the Montana Ski Association and by local Chambers of Commerce in several Montana towns. On Sunday, April 24, 524 people in 147 cars visited the ski field, 65 people participating in the skiing. Ski conditions were good at this high altitude and were appreciated by Montana skiers whose local ski courses were not available at that late date due to the melting of the snow at lower altitudes. A similar meet was scheduled for Sunday, May 1, but due to the opening of the other activities the response was not very encouraging.

With E. L. Powell of the Credit Union Section of the Farm Credit Administration in attendance the local Federal Credit Union which had recently been organized elected its officers for the ensuing year at a meeting in December. The Board of Directors consists of T. Paul Wilcox, president; Claude Moore, vice-president; Fred Bussey, treasurer; and Edmund B. Rogers and John Jay, members. The Credit Committee elected consists of Frank Oberhansley, Howard Kocher and Curtis Skinner.



Personnel: The permanent personnel consists of Edmund B. Rogers, Superintendent; John W. Emmert, Assistant Superintendent; Joseph Joffe, Assistant to the Superintendent; Keith P. Neilson, Chief Clerk; Fred G. Bussey, Agent-Cashier; Boyd N. Larsen, senior clerk; Verna M. Roe, clerk-stenographer; Virginia J. Goettlich, clerk (files & personnel); Ladd S. Shorey, clerk (timekeeper); Glenn D. Williams, clerk (warehouse); Morey L. Sher, voucher clerk; Catharine L. Harris, clerk (naturalist department); Loustalet J. Quinn, clerk (Chief Ranger's office); Alice L. Harris, clerk. Two new permanent clerk positions were established during the year, one a billing clerk and the other a clerk for the engineer's office. As no male eligibles were available for selection from civil service for these positions, authority was received under Section 2 of Rule VIII to employ outside the register. Glenn F. Muchow was selected for the billing clerk position while the clerk position for the engineer's office had not been filled by the end of the fiscal year. This force is augmented during the summer with one clerk, two assistant clerks, two assistant clerks (statistical), one assistant clerk-stenographer and comptometer operator, and one assistant clerk-stenographer for publicity. Judge T. Paul Wilcox served as United States Commissioner.

Several changes were made in the administrative personnel during the fiscal year. On April 1 the position of chief clerk was advanced from grade 11 FCS to grade 12. On November 23, 1937 Jerry P. Tonini, clerk (warehouse) was transferred to Boulder Dam and his position was filled by the transfer on February 16, 1938 of Glenn D. Williams of the disbursing office, Treasury Department, Helena, Montana. Ladd S. Shorey was selected from the Civil Service register of the Thirteenth District on November 16, 1937 to succeed Richard J. Smith, clerk (timekeeper), who was transferred to General Grant National Park.

Appropriations: Appropriations for the fiscal year 1938 were as follows:

1481000.331 Miscellaneous Expenses	\$389,750.00
1481000.332 Purchase, maintenance, operation, and repair of passenger-carrying vehicles	3,720.00
1481000.333 Roads, national forests . . .	<u>9,420.00</u>

Total 1481000 Yellowstone National Park \$402,890.00

1481000.041 Big Hole Battlefield National Monument, 1938. . . 1,125.00

1481000.051 Emergency Reconstruction and Fighting Forest Fires in National Parks, 1938 725.00

1481000.061 Forest Protection and Fire Prevention, 1938. . . 3,150.00

CCC CP5518 P-99 A-0100-8 114,615.00

505142, Emergency Relief, Interior, National Park Service, Public Buildings, Parks, Utilities, Flood Control, Etc., 1938 26,427.00

Revenues for 1938: Revenues aggregating \$454,488.15 were received from the following sources during the fiscal year and deposited in the Treasury of the United States as miscellaneous receipts:

M.R. 140350 Rental of Telephone Facilities	\$ 820.50
M.R. 140520 Permits to Enter National Parks	365,712.00
M.R. 140590 Business Concessions	79,720.08
M.R. 144260 Refund on Empty Cylinders	62.54
M.R. 144275 Reimbursement, Excess Cost over Contract Price .	6.00
M.R. 144330 Government Property Lost or Damaged	21.75
M.R. 145050 Sale of Electric Current	3,426.54
M.R. 145070 Sale of Furs	27.00
M.R. 145109 Sale of Water	272.94
M.R. 145160 Sale of Scrap and Salvage Materials	337.61
M.R. 145255 Quarters	148.50
M.R. 145310 All Other Services (Garbage Disposal)	3,932.70

Total Revenues \$454,488.15

From the above figures it is noted that the revenues which the park turned back to the Treasury Department for the 1938 fiscal year exceeded our main appropriation for that period by \$51,598.15. During the 1937 fiscal year Yellowstone revenues exceeded the main appropriation by \$23,333.27.

Due to lack of office space in the old Administration Building, the entire fiscal department moved from the Administration Building into the quarters in the Barracks Building vacated by the Post Office Department in May, 1938.

A great deal of difficulty has been experienced in securing qualified clerical personnel from the Secretary's list of eligibles for the clerical positions in the Emergency set-ups for CCC and ERA programs. This has thrown a tremendous extra burden on our regular personnel which at times could not be handled, resulting in delayed payrolls, reports, and general administrative and clerical detail.



NATURALIST DEPARTMENT

There are four permanent members of the Naturalist Staff in Yellowstone National Park. At the close of the year the permanent staff consisted of:

Park Naturalist
 Assistant Park Naturalist
 Junior Park Naturalist
 Clerk-Stenographer

C. Max Bauer
 William E. Kearns
 Frank R. Oberhansley
 Agnes E. Welch

The summer staff during the latter part of 1937 travel season consisted of twenty ranger-naturalists and three museum caretakers. During May and June of 1938 twenty ranger-naturalists were placed on the rolls and three museum caretakers were hired during June.

The large number of visitors coming to the park has increased the daily contacts per ranger-naturalist many fold over what it was a few years ago. The average contacts per man now are around one thousand persons per day. This condition has increased the number of people who go on nature walks from forty or fifty to one hundred and fifty or more, and does not give the best results for this activity. More ranger-naturalists are needed in order to divide up the parties on the nature walks and auto caravans and perform this service in a manner that would be more acceptable to the people as well as to the service. At times the museums are overcrowded.

The closing dates of the museums in 1937 were as follows:

Madison Museum	September 8
Norris Museum	September 8
Old Faithful Museum	September 9
Fishing Bridge Museum	September 9
Mammoth Museum	September 12

The opening dates of these museums in 1938 were as follows:

Old Faithful Museum	May 11
Mammoth Museum	June 6
Fishing Bridge Museum	June 15
Madison Museum	June 15
Norris Museum	June 15

The daily hours of each museum are as follows:

Mammoth Museum	8:00 a.m. to 8:00 p.m.
(Except during the first week, at which time it was open from 8:00 a.m. to 5:00 p.m.)	
Norris Museum	8:00 a.m. to 5:00 p.m.
Madison Museum	8:00 a.m. to 5:00 p.m.
Old Faithful Museum	8:00 a.m. to 9:30 p.m.
(Except during the first month, or up to June 14, 1938, it was open from 8:00 a.m. to 5:00 p.m.)	
Fishing Bridge Museum	8:00 a.m. to 8:00 p.m.

Each museum has an information desk to which ranger-naturalists are assigned during the open hours. These ranger-naturalists answer a great many questions, perform various services for the public including the selling of Government publications and other authorized publications on Yellowstone National Park.

There were six outdoor amphitheaters used in Yellowstone during the year; one at Mammoth campground which seats 240; one at Madison Junction Museum which seats 80; one at Old Faithful Museum which seats 800; one at West Thumb which seats 175; one at Fishing Bridge Museum which seats 900; one at Canyon campground which seats 200. These outdoor amphitheaters are the centers of the evening gatherings and ranger-naturalists give talks on the natural history and history of Yellowstone. The amphitheater at the Canyon campground was not completed until September, 1937, and although it has been used during June of 1938, it is not yet equipped with electricity for showing lantern slides.

One of the most popular lectures is given in an amphitheater on Otter Creek at the Grizzly Bear Grounds. Here the people sit inside of an enclosure and the bears come to the platform while the ranger-naturalist describes the life and habits of bears as they have been observed in Yellowstone. During the year it was not uncommon for 1,200 to 1,500 persons

to be seated in this amphitheater at one time and for most of the season two lectures were given each evening, one at 6:15 and another at 7:15 p.m.

The several activities of the Naturalist Department, consisting of nature walks, guided caravans, game stalks, campfire programs, etc. were carried on without much change. Groups of people coming in buses were met by ranger-naturalists at Norris Museum, Madison Museum and at West Thumb, where talks and short guided trips were given to acquaint the visitors with the area.

The routine work during the winter consisted of developing and filing negatives and photographic prints, classification of specimens for study purposes, continuation of the work in cataloging the Library, accessioning of materials for the museums, repairing and revising lantern slide files, filing newspaper clippings, filing of pamphlets and other reports, the printing of labels and repairing of exhibit materials.

Nature Notes were issued six times through the year in bi-monthly editions.

Although the Park Naturalist was ill during the fall and part of the winter of 1937, the study of Place Names of Yellowstone Park was carried on rather actively by Superintendent Rogers, Mr. Haynes and Junior Naturalist Oberhansley. Up to September 15, 1937, 963 names of features in the park had been approved and accepted by the United States Board of Geographic Names. The Place Name work now consists in compiling references to the literature and tracing the development of certain names throughout the history of the park so that a publication of historical and geographic importance may be issued as soon as possible.

Pre-season activities of the ranger-naturalists and temporary rangers, which is essentially a school for training these men for the season, were especially well attended this year by 15 ranger-naturalists, 16 temporary rangers and 6 permanent members. We were also fortunate in having with us Assistant Director Harold C. Bryant on two and one-half days of the pre-season activities.

One piece of research was published during the year; the title is, "The History of the Grand Canyon of the Yellowstone" by Arthur Howard. It was published by the Geological Society of America, contains 260 pages and numerous illustrations. The book was based upon five seasons of field work during the time Dr. Howard investigated the geological features of the Canyon area including the lava flows, glacial and lake deposits, etc. Dr. Howard has also prepared a booklet entitled "Yellowstone Through the Ages" which has been published by the Columbia University Press.

Perhaps the greatest development in the naturalist work through the past year has been in research carried on by the permanent staff. Assistant Naturalist Kearns has carried on bird study in a bird breeding census area

on the Lamar River near Specimen Ridge, an area especially rich in birds and their natural environment. He has also added many feet of movie film and a large number of still photographs to the collection.

Junior Naturalist Oberhansley has added a large number of observations on animal and bird life and during the spring of 1938 began a consistent study of the habits of the Trumpeter Swan. It is hoped that this work may be carried on for several years so that a thorough understanding of the Trumpeter Swan may be obtained and hence a more certain plan developed for saving it from extinction.

Park Naturalist Bauer has made numerous incidental investigations on the geology of Yellowstone, including an examination of the Basal Breccias in the northeastern part of the park to determine their origin. He also spent two months in Death Valley National Monument during which time studies on structure and stratigraphy were carried on, including several conferences with Dr. L. F. Noble and Dr. Thomas Thayer. It is now definitely planned that each member of the Naturalist Staff will carry on research and devote at least one quarter of his time to investigations.

The work of the Yellowstone Library and Museum Association has been carried on actively through the year. There are over 400 members in this Association and the aims and purposes of it involve the building of the Library and the development of the museums of Yellowstone Park. Nearly all of the members of the Association have contributed or donated items of special value to the National Park Service through the Association, and in recent years the Association has made some profits from the sale of books at the information desks and has thereby been able to print Trailside Notes No. 1 and No. 2 and add some equipment for the Naturalists' use.

During the year two CCC enrollees have been assigned to museum work more or less constantly and have aided in dark room work and filing of newspaper clippings and other materials.

Tables showing the naturalist activities during the travel season and the statistics connected therewith are added to this report for July 1, 1937 to June 30, 1938:

YELLOWSTONE
NATIONAL PARK
LIBRARY

3712

NATURALIST DEPARTMENT

Activities from July 1, 1937 to June 30, 1938, inclusive.

PLACE	Field Trips		Auto Caravans		Lectures		Museum	Misc.	Total Contacts
	No.	Att.	No.	Cars	Att.	No.	Att.	No.	
Canyon	165	4537				215	139432	87258	231,277
Fishing Bridge	75	1366	79	472	1841	112	37324	82101	178
Madison	43	270				69	3310	112673	310
Mammoth	83	3785	207	3842	18658	85	24387	169228	5312
Mt. Washburn /1								25164	25,164
Tower Falls /2	10	46				17	898		5324
Norris	304	15571						93962	1563
Old Faithful	167	16898	85	4336	14854	85	54205	579428	22203
West Thumb	92	3050				71	8720		15550
Outside of Park						7	1289		1,289
TOTAL	939	45573	371	8650	35353	631	269565	1062556	137698
									1,550,745

TOTAL CONTACTS, July 1, 1936 to June 30, 1937, inclusive 1,496,539
TOTAL CONTACTS, July 1, 1937 to June 30, 1938, inclusive 1,550,745
PARK VISITORS, July 1, 1937 to June 30, 1938, inclusive 486,134

/1 Figures for months ending August 31, 1937, July 31, 1937 and September 30, 1937
/2 Figures for months ending August 31, 1937 and June 30, 1938



PROTECTION DEPARTMENT

General: The Protection Department activities for the past year have consisted of public contact work, sale and issuance of permits at the entrance stations, law enforcement, wildlife studies, fish planting, forest fire pre-suppression and suppression work, highway patrol and regulation of traffic, protection patrols and other general duties.

Considerable time was devoted last winter by the protection personnel in conducting range studies on the northern game range. Monthly counts of game animals on the various grazing units were made and during these counts, observations were made of the range conditions and condition of the various animals. Several shipments of live elk were made during the past winter and the protection personnel trapped and loaded these animals for shipment.

With the greatest travel in the history of Yellowstone, a great deal of time was spent in public contact and the sale and issuance of permits at the park gateways. With the increase in travel, the traffic problems have been increased and four highway patrolmen were used to facilitate the appropriate regulation of traffic regulations. The proper handling of the increase in park visitors was handicapped due to the limited personnel.

Forest insect control projects have been carried out in utility areas and campgrounds where there was definite need for such control. The Yellowstone nursery while being carried as a CCC project has been under the direct supervision of the protection department personnel.

Personnel: The Protection Department personnel consists of Chief Ranger Francis D. LaNoue; four Assistant Chief Rangers, Maynard Barrows,

Curtis K. Skinner, Albert E. Elliott, and Hugh Peyton; nine district park rangers and fourteen permanent park ranger positions; forty-four temporary ranger positions; one chief buffalo keeper; one assistant chief buffalo keeper; one buffalo herder; one night watchman assigned to Mammoth. The Chief Ranger position was reclassified during the year from Grade 11, FCS, to Grade 13, FCS, and Mr. LaNoue was appointed Chief Ranger. Four assistant chief ranger positions were reclassified from Grade 9, FCS, to Grade 11, FCS, and nine district park ranger positions, Grade 10 FCS, were established. Assistant Chief Ranger George W. Miller was transferred to Glacier National Park as Chief Ranger, Hugh Peyton was transferred from Chief Ranger in Glacier to Mr. Miller's position in the Yellowstone and Ranger Thomas K. Garry was transferred to Blue Ridge Parkway during the year.

Forestry:

Insect Control: Three control projects for Mt. Pine Beetle were completed at Mammoth, Old Faithful and Fishing Bridge in the utility and campground areas. One control project for Douglas Fir Beetle was completed in the Mammoth and Game Ranch areas. The marking of the infested trees was accomplished by rangers and the treating of the trees was completed under a CCC project and supervised by the Protection Department.

Nursery: The Yellowstone forest nursery was carried as a CCC project and has been under the supervision of the Protection Department. While the nursery has not been established a sufficient length of time to produce trees for planting, it is now starting to show results of the great amount of work that has been spent in this project. By the end of the last growing season there were approximately 1,000,000 seedlings and cuttings in the nursery. However, this figure will probably be more when the fall sown beds have completed their germination.

Forest Fire Protection: The 1937 fire season was without a serious conflagration, as during the month of August only was the fire hazard comparatively high. During this month 63 per cent of the fires occurred for the season. A total of 43 fires have occurred during the past year, two of which have occurred this season. Of the 43 fires that have occurred from July 1, 1937 to June 30, 1938, 17 were caused by lightning and 26 were man-caused; 39 were Class "A", 4 Class "B" and none were Class "C". The total area burned was less than five and one-half acres. The 1938 fire season to date has been low due to the heavy snowfall last winter and the heavy rains that occurred during the month of June.

Building Fire Protection: All buildings in the park, including those owned by park operators, were inspected during the fiscal year for fire hazards and recommendations made for correcting hazardous conditions. Some progress in elimination of serious hazards and in installation of new fire protection equipment was made during the year, but needed structural changes have been largely neglected by the park operators due perhaps to expense involved and failure to recognize the hazard of present structures

should a serious fire occur.

Due to frequent inspections and insistence upon the removal of highly combustible material from buildings and storage sheds, housekeeping conditions were generally improved during the year. A total of eight building fires occurred during the fiscal year 1938, involving only government-owned tents or buildings. No fires in operators' buildings are known to have occurred and no reports were submitted.

The fires which occurred in government-owned tents or buildings involved damages as follows: To structures, \$514.92; to inventoried contents, \$120.61; and to records and non-inventoried contents, \$5.25.

Trail Maintenance: Trail maintenance work accomplished during 1938 fiscal year included minimum maintenance of 964 miles of horse trails, 25 miles of footpaths and 33.5 miles of truck trails. Limited trail maintenance funds were used to recondition 13½ miles of horse trails as follows: Canyon-Norris trail, 3 miles; Elk Creek-Tower Falls trail, 3 miles; Golden Gate-Obsidian Creek trail, 4 miles; and Pelican Creek-Pelican Cone Lookout trail, 3½ miles.

Wildlife in the Park: During the past year the observation of wildlife by park visitors was one of the major attractions in Yellowstone. With the increasing popularity of photography more people are taking advantage of the bird and animal life found in the park. The flash of a mule deer going through the brush, the majestic splendor of an elk herd on the horizon and the inquisitive circling of the pronghorn antelope are treasured memories that our visitors continue to enjoy. The bears, the buffalo and the moose in their natural habitat furnish sights that vie with the Canyon and the geysers.

The winter of 1937-38 was rather unusual, insofar as weather conditions were concerned. Late in November and early in December rain storms occurred and crusted the small amount of snow on the ground at that time. The crusted condition of the snow precipitated heavy migrations of game animals to the lower altitudes and concentrations on certain areas of the winter range resulted. Although freakish weather conditions occurred the game animals came through the winter in fair condition and only normal losses in numbers were noted.

The spring months came with much rain and abundant forage is now found throughout the park. All of the grazing animals are now in excellent condition.

Game Census: The numbers of black and grizzly bears were obtained during the summer months, while the antelope, bighorns, buffalo, deer and elk were counted during the winter months. The moose were not counted as it was thought that there had been no noticeable change in the numbers of these animals. Excellent results were obtained when the winter

counts were made and we believe that the census is quite accurate.

The actual counts and estimates of game animals in Yellowstone National Park are shown in the following table:

<u>SPECIES</u>	<u>ACTUAL COUNT</u>	<u>ESTIMATED</u>
Antelope	786	800
Bear:		
Black	184	520
Grizzly	80	290
Sheep, Bighorn	175	200
Buffalo	755	800
Deer	850	900
Moose	No count	700
Elk:		
Northern Herd	10,976	11,000
Gallatin Herd	No count	2,600
Interior of Park	652	700
Total in Park	11,628	14,300

Bears (Black): Black bears are common sights along practically all of the roads in the park and in spite of public warnings regarding the dangers involved in feeding these animals our reported injuries increased during the past year. A total of 151 injuries were reported last season as compared with 42 the year before. Every conceivable effort is being made to reduce the bear injuries, including such steps as the stamping of park permits with warnings, the display of warning signs, radio and newspaper publicity, constant warning by rangers on patrol and the incorporation of warnings in park literature. The size of the task is great as there are 350 miles of roadway where bear incidents may occur and the traveling public has an insatiable urge to become intimately acquainted with the bruins. The bear damage problem is not as serious as it was in past years. Last season 83 such incidents were reported while in 1932, one of the bad years, 451 were recorded.

Bears (Grizzly): The Grizzly Bear Ground at Canyon is increasingly popular and it is necessary to have two lectures each evening in order to accommodate the crowds. From 500 to 600 cars must be parked but the parking area will only handle half this many and so a difficult problem is presented. Last season there were as many as 70 grizzlies at the bear grounds; however, this season the food is being reduced in order to overcome the heavy concentration of bears in one area. To the end of the fiscal year about 20 grizzlies were in the area and we hope to maintain this number and avoid the heavy concentration which presents a real hazard to park visitors. Four grizzly bears have been shipped to zoos this year.

Buffalo: The 800 buffalo in the park are now found in the Lamar Valley, the Pelican Creek drainage, Hayden Valley and Fountain Flats. The

animals on the two latter areas were taken from the Lamar Valley herd and released at these places in 1936 and the plants have been successful. Forty buffalo were counted in Hayden Valley this spring while 15 were seen in the Fountain area.

The reduction of the Lamar Valley herd was not large last winter as it seemed desirable to allow this herd to increase for one season. In accordance with this plan, 25 buffalo were removed, 13 being shipped alive and 12 being slaughtered for the Wind River Indian Agency. Two live shipments were made to foreign countries, two cows going to the Zoological Gardens in Buenos Aires and a bull and a cow to the Zoological Gardens in Keijo, Korea.

The amount of hay at the Buffalo Ranch last fall was 647 tons including 180 tons left over from the previous winter. The buffalo were fed 321 tons and the park horse herd 120 tons, making a total of 441 tons fed during the winter. The surplus hay remaining will be utilized during the coming winter. Last summer hay was harvested at the Buffalo Ranch but the fields at the Slough Creek Ranch, Yancey's and Gardiner were not cut and the forage was utilized by game during the winter months.

The buffalo show herd on Antelope Creek has been popular during the past year. The practice of driving the animals into a corral where they could be seen at close range was discontinued last year. They are now held in the large pasture where they may be viewed in a natural setting.

Elk: The reduction of the Northern Yellowstone elk herd was carried on, as in the past three years, in accordance with the agreement of all interested parties that the winter range is overstocked. The National Park Service recommended that 3,000 elk be taken from the herd, first, by the shipment of live elk to zoos and areas needing restocking; second, by elk taken in open hunting areas; and third, by slaughter in the park. Fortunately weather conditions caused a heavy migration of elk to open hunting territory and it was unnecessary to accomplish any of the reduction by slaughter. A total of 3,912 elk were removed from the herd in the following manner:

Killed by hunters	3,586
Live Shipments	214
Miscellaneous Deaths	112
Total Reduction -	3,912

Range studies were continued throughout the entire year in order to obtain data necessary in the formulation of management plans. This work has been carried on for four years and we now have enough information to know the number of animals using the range and the amount of forage available during the average winter.

Other Game Animals: The antelope are apparently increasing in the park while the numbers of deer, moose and bighorn sheep have remained about the same during the past three years. Antelope are viewed by park visitors from the north entrance to the Buffalo Ranch, while moose are almost always seen in Willow Park and the Lake and Canyon areas. Bighorns are often seen in the vicinity of Mt. Washburn. Deer are distributed throughout the park during the summer months and are occasionally seen along the roads.

The rodent control project has been continued in the utility areas. The work has been done by park rangers during the spring months before travel becomes heavy.

Birds: There have been no material changes in the bird population, the species observed, or the conditions affecting bird life during the past year. Waterfowl along the streams and on the lakes have continued to be an attraction for visitors. The Trumpeter Swan observations have been continued and 29 cygnets were counted last summer. Forty adults were also seen making a total of 69 actually counted in Yellowstone. This spring three female swans were found dead in the Trumpeter Lake section, one of which was definitely killed by coyotes. The nesting activities have not been normal this spring, as only three pair are actually known to be raising broods.

Fish Planting: With the cooperation of the U. S. Bureau of Fisheries and the Fish and Game Departments of Montana, Wyoming and Idaho, 16,850,747 trout were planted in Yellowstone National Park waters during the 1937 season. Compared with last year this is an increase of 6,066,300 in the number of trout planted. This increase may be attributed to the large egg collections made by the Bureau of Fisheries, as all previous records for blackspotted trout, Montana grayling and rainbow trout were broken the past year.

The number of people fishing Yellowstone streams and lakes also increased the past year, with 499,242 visitors entering the park in 1937 as compared with 432,570 the previous season. During the past fiscal year 138,654 fish were reported as being taken, while the previous year 120,894 fish were reported at the checking stations.

The number of fish planted by species during the past year is as follows:

<u>SPECIES</u>	<u>NUMBER</u>
Blackspotted Trout	13,123,977
Montana Grayling	2,864,950
Rainbow Trout	572,665
Loch Leven Trout	225,280
Eastern Brook Trout	63,875
Total -	<u>16,850,747</u>

Law Enforcement: One hundred and twelve law enforcement cases were handled the past year as compared to seventy-seven cases the previous year. Convictions were secured in all the cases which were presented before United States Commissioner T. Paul Wilcox with the exception of two cases that were dismissed and one which was paroled. The following tabulation shows the arrests made, classified according to offenses and the total amount of fines assessed for each class of offense:

<u>OFFENSE</u>	<u>NUMBER</u>	<u>TOTAL FINES</u>
Speeding	* 67	\$722.50
Catching & possessing more than limit of fish.	4	35.00
Reckless driving	** 6	79.00
Driving while intoxicated	*** 7	175.00
Taking fish under legal size	1	2.50
Building campfire without permit	2	52.00
Disorderly conduct	# 9	45.00
Molesting Government property	## 6	49.50
Defacing natural features of park	1	10.00
Interfering with an officer in performance of duty	1	30.00
Hunting in park	1	3.00
Petty larceny	### 4	100.00
Fishing in closed waters	1	6.00
Grand larceny	2	-
TOTAL -	112	\$1,514.50

*One case paroled for 30 days.

**Two cases dismissed.

***Four cases had jail sentences.

#Seven cases were jail sentences.

##One case jail sentence and fine.

###Four cases had jail sentences.

Two grand larceny cases were bound over to United States District Court, one bail was \$250.00 and another was \$500.00.

Accidents: A total of 115 automobile accidents were reported and investigated in the park during the year as compared with 109 accidents reported last year. Of the 115 accidents reported, three resulted in fatalities to three persons. One of these fatalities was the result of a truck going over a grade on a road construction project. Severe property damage occurred in 38 accidents.

Three park visitors and one park employee were drowned during the past year. Two drownings occurred while swimming and two occurred while fishing in park waters.



ENGINEERING DEPARTMENT

The Engineering Department organizes and directs all road and maintenance work carried on by force account or day labor, and, cooperating with other departments, directs similar work on trail construction, having charge of all general engineering projects in the park. Activities include surveys and the preparation of maps and plans for water and sewer installations, topographic surveys, design and construction of buildings and various other physical improvements.

The personnel consists of Park Engineer C. A. Lord, Assistant Engineer F. A. Lucas, and General Foreman D. T. White, together with such temporary engineers and assistants as the volumes of construction and engineering may warrant. All CCC engineering is under the supervision of the Park Engineer, such engineers as may be assigned to the park working under his direction.

Road maintenance activities cover a highway system totalling 401 miles of roadway, 350 miles of which lie in the park boundaries and 51 miles comprising approach road sections. This work is carried on by road crews located permanently at 13 section camps within the park limits and one crew in addition to the snow crew, sometimes engaged in the repair and construction of oiled mat surfaces throughout the park, sometimes on the repair of bridges and work of more specialized nature. Maintenance items include snow removal, slide and washout removal, general surface maintenance, and roadside protection. Snow removal for the period, though not excessively greater than previous years for quantity, was much heavier with exceptionally wet snow. Palliative oil surfaces were placed on the Tower Junction-Northeast Entrance road, and the Old Faithful-Isa Lake section.

A short stretch of road was built to the Bechler River ranger station at the southwest corner of the park.

Completed major road construction, under the supervision of the Bureau of Public Roads, consisted of eleven miles of base course surfacing between Canyon and Lake Junctions, the Fishing Bridge and base course surfacing of the approaches, the Firehole River bridge near Old Faithful, and parking areas at Old Faithful, Biscuit Basin, and the fish hatchery. The Gibbon River bridges construction continued very slowly. The highway construction from West Thumb toward Old Faithful progressed very satisfactorily, only wet weather preventing the completion of the project for acceptance. It should be completed early in the 1938 season. One contract was let, that for the Mammoth Esplanade and its connection road. Satisfactory progress has been made to date. Studies were made for the Canyon highway connecting Tower Falls and Lake Junctions in the vicinity of Canyon Junction.

Surveys were made for the study of a new water system for the Fishing Bridge and Lake areas. Topographic mapping of the Canyon area was made, to be extended later. Studies were completed on the Mammoth campground, comfort stations built, two cottages finished and two others started, water, sewer and electric installations made, and about 90 per cent of the main campsite area completed.

The temporary sewage disposal system at Old Faithful, started in the last year, was completed and put into operation early in the season, and a new sewer system was started at Tower Falls, studies having been made and the comfort station construction started, disposal plant and spray system located.

A new W.P.A. allotment was made in April providing a work program for mainly labor jobs. Good progress was made on flooring and painting the second floor of the barracks building, construction of the summer cottages, and about one and one-half miles of the terrace trails. Two projects, the old horse pasture fence obliteration and the game ranch irrigation ditches, were completed.

SANITATION DEPARTMENT

The work of the Sanitation Department is carried on under the supervision of H. B. Hommon of the U. S. Public Health Service and under the direct charge of William Wiggins, Master Plumber.

The work of this department includes the maintenance, operation and construction work on water systems, sewer systems, incinerators and garbage hauling; also all heating systems, stoves, refrigeration plants and sheet metal work.

During the fiscal year work completed in Mammoth consisted of install-

ing one bath tub, shower bath, one sink, three toilets, two wash basins, one built-in paper holder, bath tub hand hold, one towel rack and one sink, and manufacture and installation of two Monometal drainboards and installation of new electric water heater in building 2B; installation of new electric heater in building 24, new electric water heater in building 15, new drain trap and bath tub in building 5C and new bath tub in building 16; installing two toilets, two washbasins, two sinks, one hot-water tank and 175 feet of sewer in building 44; installing new water tank and new kitchen range in building 49; installing plumbing complete in two 3-room cottages and laying 400 feet of 8-inch sewer to the cottages; installing plumbing complete in two 8-stall comfort stations; laying 400 feet of 4-inch water pipe, 2000 feet of 2 $\frac{1}{2}$ -inch water pipe and 200 feet of 2-inch galvanized water pipe in the Mammoth Campground; excavating and installing 100 feet of 2-inch galvanized water pipe, excavating for and constructing one 4'x4'x7' cement manhole; installing five floor drains in water meter manholes; moving two water hydrants and installing four new hydrants; installing eight new frost-proof hydrants; repairing nine kitchen ranges and twelve heating stoves and relining the incinerator; recharging fourteen fire extinguishers; fumigating bunkhouses 43 and 44, barracks building 36 and the Norris, Madison, Old Faithful, Lake, Sylvan Pass and Canyon bunkhouses.

At Old Faithful there was excavated for and installed 1200 feet of 2-inch water pipe and the construction of a new cesspool for the bunkhouse.

At Lake there was installed a complete shower bath and hot water heater in the bunkhouse.

At Fishing Bridge 2,000 feet of 6-inch water pipe was installed across the Fishing Bridge.

At Tower Falls 1,800 feet of 2-inch pipe to the ranger station was lowered and 250 feet of 6-inch pipe laid.

At the Buffalo Ranch there was excavated for and installed 50 feet of 4-inch sewer and 300 feet of 3/4-inch water line, and cesspool 6'x8'x8' was constructed. Also installed a new water tank in the messhouse.

At Gardiner a new toilet and wash basin was installed in the checking station.

At all points in the park there were numerous miscellaneous items handled by this department.



ELECTRICAL DEPARTMENT

All electrical work, the power plant and radio activities, are under the supervision of Chief Electrician Lloyd W. Seasholtz. Besides Mr. Seasholtz the permanent electrical department personnel consists of Electricians Eri A. Allan, Robert E. Book, Charles M. Rector and George McMullin, all of whom act as power plant operators and the force is augmented during the summer by several skilled employees and laborers.

Twelve kerosene burning refrigerators, one Electrolux and fifty electric refrigerators, were received from the Federal Housing Administration, two of which were installed in the commissary, two in the hospital, one at the messhouses at Old Faithful, Lake and Thumb and in permanent quarters which were not previously supplied with electrical refrigeration. All permanent government employees' residences and all mess operations in the park are now provided with kerosene or electric refrigeration. The work in this department consisted of wiring the Canyon amphitheater for light and movie machine service; making provision for the installation of electrical service to the new post office at Mammoth; installing oil switches in our high voltage aerial circuit to sectionalize the system for trouble hunting; installing a parkway cable in back of the new Mammoth Hotel to replace the old overhead circuit, the cable therefor having been purchased by the Yellowstone Park Company; making necessary installations for furnishing electrical service for both the old and new Mammoth CCC camps; moving fire alarm controls from the old garage to the utility building; installing service circuit and meter in Weather Bureau office; inspecting all government residences and work shops to locate radio interference and reduce fire hazard, and making necessary repairs; wiring three new residences near the Mammoth power plant; installing electric service to the new residence and amphitheater near the Mammoth power plant; wiring two of the three new campground comfort stations at Mammoth; installing transformer and meter for the Lodge laundry; installing wire and poles between the Thumb mess and

the Yellowstone Park Company's new power plant and wiring the Thumb mess for light and refrigerator service; making the necessary installations to furnish electric service to the Yellowstone Park Company's new utility area, the Weather Bureau, the Administration Building and Engineer's office; re-wiring the basement, first and second floors of the north wing in the barracks building and installing new direct lighting; installing approximately 17 miles of new metallic copperweld wire between Lake and Thumb; repairing the 100 pair telephone cable between the switchboard and apartment house; installing three underground terminal cans at West Yellowstone and removing the old aerial telephone service; inspecting all out-post telephones and installing condensers in each phone to enable testing the lines from Mammoth; re-building the section of telephone line between the Tower Falls Junction and Lower Slough Creek exchange; installing telephone service in the north wing of the barracks building, installing new telematic cable in the barracks building to accommodate the four stations moved to this location; and installing 10 telephones in well constructed boxes along the main loop highway at convenient locations for emergency use by the patrol cars and government officials.

The main radio transmitter and receiver at Mammoth was moved to the first floor of the administration building and located in the former accounting office. A new Hammerlund super-pro receiver was purchased and installed at the Mammoth radio station and four new American-Bosch police radio car receivers were purchased and installed in three Ford patrol cars and the chief ranger's car. Four new semi-portable radio sets, one 15-watt, 115-volt A.C. radiophone, one 15-watt, 6-volt D.C. radiophone, and a 12-volt windcharger were furnished to the Yellowstone by the CCC administration. All radio equipment has given very satisfactory performance during the year and is now a dependable communication system. Considerable business is now carried on by the radio which greatly relieves the heavy load on our park telephone system.

BUILDING MAINTENANCE & CONSTRUCTION

All carpenter work is under the general supervision of Master Carpenter T. A. Bowman, and painting is under the supervision of Master Painter Thomas M. Thompson, who succeeded Lee N. Tompkins in this position, the latter having resigned on March 15, 1938. The forces are augmented during the summer by several carpenters, carpenter's helpers, and painters.

MECHANICAL DEPARTMENT

The Mechanical Department is under the supervision of Master Mechanic Robert R. Robinson and includes 6 permanent mechanics, 1 permanent handyman mechanic, 1 permanent blacksmith, 2 temporary mechanics, 3 temporary handyman mechanics and 1 temporary blacksmith (horseshoer).

The work carried on by this department consists of the maintenance, repairing and overhauling of all fixed and motorized equipment, which includes trucks, tractors, graders, cars and fixed equipment such as electric power plant equipment, water and sewage pumping plants, farm machinery, etc. In addition to the above-mentioned equipment, several hundreds of small tools such as shovels, picks, axes, saws, etc., are reconditioned each year.

During the year one 5-passenger sedan, three 1/4-ton coupe pickup trucks, three 1/2-ton pickup trucks, three 1 $\frac{1}{2}$ -ton dump trucks and two motor patrol graders were purchased. One Ford coupe and one Ford sedan were transferred from Region II to this Park. In addition various small tools and equipment were purchased.

Classes in "auto mechanics" for CCC enrollees from the two Mammoth camps were held in the shops during the winter months. Safety first activities were also carried on for the men in the shops, as well as in other departments.

The Safety Committee is composed of Robert R. Robinson, Deate T. White and Curtis K. Skinner and has been functioning throughout the year with the fullest extent of cooperation.

STOREHOUSE OPERATIONS

The storehouse operations have been generally satisfactory throughout the past fiscal year. A new refrigeration box especially designed to keep produce and fresh vegetables for our various messes has been installed, as well as a new meat counter and a new floor in the receiving and shipping room. A large compound enclosure has also been constructed in which we are now able to safely store such items as culverts, bridge plank, telephone poles, sewer tile and many other items of a similar nature. This has meant a great deal in overcoming the inventory shortage that previously existed.

A current inventory of about \$65,000 has been carried throughout the year. The total value of business handled amounted approximately to \$225,000. About one-half of this amount has been sales to other governmental agencies, such as the Army, Bureau of Public Roads, Civilian Conservation Corps, Bureau of Fisheries and Weather Bureau.

MESS OPERATIONS

During the past year several large restaurant or mess refrigerators were received as surplus from the Federal Housing Administration. These various refrigeration units have been installed in our larger messes throughout the park and in addition purchase of eight kerosene refrigerators

tors was made to take care of some of the smaller messes.

The refrigeration in the park messes has effected a great economy in our operation costs and has resulted in lowering of the meal rates. In addition much more satisfactory menus have been possible and general all-around satisfaction has been experienced due to this modernization. Formerly no refrigeration was available at all in the messes in the interior of the park, with the result that frequent spoilage of meat and fresh vegetables has taken place. We believe that the messes on the whole have operated more satisfactorily this year than in previous years, due both to the refrigeration now installed and also to the fact that we have been able to secure competent help in our various mess houses.

The total value of business for the past year in the mess operations totaled approximately \$70,000.

CIVILIAN CONSERVATION CORPS

At the beginning of the fiscal year there were four CCC camps in the park. Three of these camps were summer, or seasonal camps, and one, located at Mammoth Hot Springs, was a permanent camp. As is customary these camps are located at different places throughout the park, namely, Mammoth, Canyon, Lake and Nez Perce, which are the same locations occupied by the camps last year. However, in the fall of 1937 Canyon camp was condemned and abandoned and will be removed this summer. The CCC Company 544, which occupied Canyon Camp, was moved into Mammoth Hot Springs and was stationed in the old Army Barracks building while waiting for a new camp to be constructed near the present Mammoth CCC camps. There were at the end of the fiscal year two permanent camps in the park and two summer camps. The two summer camps arrived on the 16th of May and 2nd of June and are located at Lake and Nez Perce while Camp YNP #1 and YNP #7 at Mammoth were occupied all winter.

The commanding officers of the two Mammoth camps have accomplished many improvements to make camp life more attractive to the boys and these men are to be commended for their operations of the camps. The morale in both of these camps has been excellent during the entire winter and very little trouble of any kind was experienced from the enrollees.

Two project superintendents, two landscape foremen, two forestry foremen, six junior foremen, five mechanics, one clerk-accountant, and five junior facilitating personnel comprised the personnel required to conduct the work of the two winter CCC camps. However, as more camps arrived in May and June of this year more superintendents and foremen were necessary, but due to the delay in the necessary eligibles being certified, the projects were carried on without proper supervision. A fine spirit of cooperation has existed between the regular National Park Service employees and the CCC-NPS and Army personnel at all times.

Supervisory personnel of a more qualified nature than any time in the past have been certified to us this year. Although every effort was made by all offices concerned by the end of the fiscal year the camps still lacked the necessary supervisory personnel, but everything possible was done to fill the vacancies that existed to prohibit the work programs from suffering.

Some of the major work completed by the CCC camps during the past year consisted of the construction of a powder house, gauging stations and cap house; installation of three water systems and completion of one sewer system; completion of six equipment storage sheds, one lookout house and one lookout tower and house; installation of cable crossings, masonry dams, and one reservoir. Much other work was completed such as trail maintenance, building maintenance, dump cleanup, and road cleanup.

All CCC equipment has been kept in first-class condition all year and has been operated as efficiently and economically as possible.

PARK OPERATORS

Activities carried on by the various operators follow:

Yellowstone Park Company, This Company, which was organized near the end of the 1936 fiscal year, operates all hotels, lodges, cabins, boats, transportation, horseback trips, and most of the cafeterias and also has the wood selling concession. Following is a report on new construction work and new equipment purchases made by this Company in connection with its various operations:

At Gardiner the freight elevator and the warehouse was converted into electric drive, there was purchased and installed an oil burner and boiler in the MacDonald residence, valve pit and material transportation, and a lead-covered cable for intercommunicating telephone system was installed in the transportation garage building. For the transportation division there were purchased 20 new 14-passenger White buses, 2 new 7-passenger Buick cars, 90 private party cars, 1 new 5-passenger Buick 61 officer car, and one new Ford laundry delivery truck.

In connection with the Mammoth Hotel the Company built and completed the recreational building with dance hall, barber shop, beauty shop, cocktail lounge and curio shop, including plumbing, heating and wiring, and purchase of all material for same; 70 cabins, with roughing in plumbing and wiring of 50 of them and installation of underground wiring system together with hot water duct, were completed. Seventy-five per cent of the sewage system and cold water piping was completed at the end of the fiscal year and all plumbing and wiring materials for same were purchased. The grading and draining of the cabin area was 90 per cent complete, as was also the drivers' bunkhouse and messhouse. A condensation tank and pump were

purchased and installed in the Hotel power plant. There were also purchased for the Mammoth Hotel a range and bake-oven, linen curtains and furnishings and rugs for cottages, umbrellas and tables for porch, 36 new bedroom lamps, 2 new cash registers, equipment for the new messhouse, 72 new beds, springs and mattresses for the cottages, new waffle irons and fans for the Grill, 2 beer coolers, 1 new sewing machine, 19 Venetian blinds for the Lounge windows and 1 rubber tired truck. The lower portion of the main Mammoth Lodge building was converted into laundry quarters and new laundry machinery, costing approximately \$20,000, was purchased and installed. Twenty-three cabins were moved to Camp Roosevelt and screens are being placed on all of the cabin windows. Considerable repair work was done throughout the camp. In the tourist cabins some renewal and repair work was done and most of the cabin furniture and floors were repaired.

In connection with Old Faithful Inn, the drivers' bunkhouse, mess-house and storage compound were repaired and the usual repairing was accomplished at the Inn. New Ammonia expansion coils were purchased and installed in the ice plant and 40 new flush valves were purchased and installed in the east wing. Materials and equipment previously purchased and necessary to the conversion of the boiler from wood to oil-burning were installed. Some remodeling was done in the kitchen and there was purchased a new salad refrigerator, a new glass washing machine, new linen, new dish-washing trays for the dishwasher, and 130 yards of cretonne draperies for the girls' dormitory. At the Old Faithful Lodge materials and equipment previously purchased and necessary to the conversion of the boiler from wood to oil-burning were installed and the construction of an employees' bath house has been started. A cold storage cabinet was installed for fresh frozen vegetables and new hardwood floor was placed in the kitchen, bakery, pantry, etc. A complete new set of decorated china and all new silverware were purchased, while considerable renewal and repair work was done throughout the entire camp. The work in connection with the tourist cabins and cafeterias consisted mostly of renewal and repair work and most of the cabin floors and furniture were repaired.

At the Lake Hotel the usual yearly repairs and the painting of the front of the hotel was accomplished, while the rooms were repaired and re-finished. The locomotive type of boiler was purchased and installed, which included the moving of the smoke stack while an addition was made to the boiler room. The Hotel power plant boilers were converted for use with fuel oil. A new carpet for the second floor hall, linens and spreads and 2 new cash registers were purchased. At the Lodge all power plant boilers were converted for burning fuel oil and a cold storage cabinet was installed for fresh frozen vegetables. General renewal and repair work was done, including the repainting of the lobby floor.

The Boat Company operations consisted of the construction of one new brick cooking grill on Stevenson Island, one new dish cupboard, one 8 x 12 dock crib at Bridge Bay and the laying of a concrete floor and glassing in of the south side of the tables. One new 19-foot Chris-Craft, one new 25-

foot Chris-Craft and 25 new 14-foot steel rowboats were purchased.

At Fishing Bridge considerable renewal and repair work was done in connection with the tourist cabins and cafeteria, and at the boat house a new floating dock was constructed and there was purchased and installed a sewage pump system, septic tank and sludge bed.

At the Canyon Hotel the usual yearly repairs were made and there was purchased and installed a new pressure tank for the new wing passenger elevator. All coal-burning boilers were converted for the use of fuel oil and a new linen closet was constructed in the dining room and a new garbage room was constructed. For the Hotel there was purchased a new carpet for the lounge steps, a new refrigerator for the store room, linen and spreads, 150 upholstered chairs, 100 side chairs, a new range top, new coffee urns, 6 dozen new waste baskets, 40 new vacuum cleaners, 200 yards of room carpet, 2 grid heads for the tailor shop and one rubber tired truck. At the Lodge a cold storage cabinet for fresh frozen vegetables was purchased and installed, and there was constructed an employees' bath house with eight showers and four lavatories; also two employees' dormitories with four rooms in each building. Considerable renewal and repair work was done. At the tourist cabins and cafeteria there were constructed twelve 12 x 14 and fifteen 12 x 20 log and frame cabins. A new hot Bain-Marie was installed in the cafeteria in the kitchen, as well as a new hot Hobart food mixer.

At West Thumb construction was started on a cabin for a temporary office building, to be 12 x 20 feet in dimension. A Caterpillar Diesel power generating unit, together with fuel oil storage tanks and switchboard complete, was purchased and installed, and a new building to house same was constructed. At the end of the fiscal year all buildings were being wired for electric light and power, and street lights are being constructed throughout the cabin area. Considerable renewal and repair work was done in the cabin area and most of the cabin furniture and floors were repaired.

At Camp Roosevelt 23 log and frame type cabins were moved from Mammoth Lodge. Cement footings were built for the cabins and electric lights were installed. Considerable work was done in making streets to the new cabin area and considerable renewal and repair work was accomplished.

Hamilton Stores, Inc. The northwest end of the Hamilton Store at Old Faithful was remodeled, the length of the fountain was extended by ten feet and a new refrigerated back bar was installed. The roofs on the store building and gas station were repaired and restained and the entire interior and exterior of both buildings were repainted. The entire roof of the swimming pool at Old Faithful was also restained.

At Lake the dwelling and the store building were resingled and restained. The entire interior of the store building was repainted and new fountain equipment was installed to take care of the congestion at that place.

At West Thumb a soda fountain and a refrigerated meat case were installed at the store. Also at the gas station an electric pump, together with an air compressor for free air for the park visitors, was installed.

Haynes, Inc. This Company operates all of the picture shops throughout the park including those in the hotels and lodges, and operates the general stores at Tower Falls and Camp Roosevelt.

Outside signs of cedar have been installed at the shops at Fishing Bridge and Grand Canyon and the general stores at Tower Falls and Camp Roosevelt, while 25 especially designed outside benches have been installed at the various shops for the convenience of visitors.

At the Tower Falls and Camp Roosevelt stores the glassware has been replaced with paper cups, dishes and containers for sanitary purposes. A second 5000-watt electric plant and a new kitchen range were installed at Tower Falls and a new kitchen range was added to the shop at Old Faithful.

The construction of the two general stores at Camp Roosevelt and Tower Falls was completed, as well as a complete remodeling and re-wiring of the shop at Canyon and the construction of new chimneys on the Canyon shop to replace the old ones on this building.

Other expenditures have been made for equipment, including automatic tape machines for all shops, cash registers, as well as other sales equipment, typewriters, filing equipment, etc.

Pryor Stores. The Pryor Stores in the park operated by Pryor and Trischman consist of general stores at Mammoth, Canyon and in the auto camp at Mammoth, as well as a cafeteria in the Mammoth auto camp and a Coffee Shop in the Mammoth headquarters area.

A new dormitory to house male employees in the general store and filling station at Mammoth was constructed, as well as a receiving porch for merchandise at the Mammoth General Store. Repairs were also made at the Mammoth Cafeteria and Canyon Store, and a new refrigerator and fountain equipment were purchased and installed at the Canyon Store and for the fountain bar at the Coffee Shop.

MEDICAL SERVICE

The Mammoth Hospital was closed on September 12 and all hospital cases handled at the Livingston hospital. The Mammoth Hospital was re-opened on June 16. Dr. Paul L. Gailmard, who succeeded Dr. Ivan T. Budaeff as park physician in October, 1936, resigned his position and departed for California on December 20. Following the receipt of an extension for the medical contract for an additional year pending the preparation of a new medical contract, Dr. G. A. Windsor, who holds the medical contract, obtained the

services of Dr. R. E. Fallis of Chicago, Illinois to succeed Dr. Gailmard. He reported to the park on January 14 and immediately took over his new duties.

Two hundred eighty-seven patients were handled at the hospital during the fiscal year which includes 148 sick, 10 bear bites, 41 major injuries, 51 minor injuries, 4 pool burns, 6 major surgical, 15 minor surgical, 2 pneumonia, 3 cardiac, 1 malaria, 2 mumps, 1 measles, 1 chicken pox and 2 confinements, the number of patient days in the Mammoth Hospital totaling 1240. Eight hundred fifty-five patient days were rendered in the Livingston hospital for Yellowstone patients. Dr. Windsor traveled 16,500 miles during the fiscal year while his associates traveled 13,000 miles. The ambulance traveled 7,750 miles. One hundred sixty-five calls were made and 11 tours of the park were accomplished. Four thousand two hundred people made office calls, which does not include the personal contacts made in Livingston during the winter. The nurses at the various dispensaries received 6,500 calls during the season. Ten deaths occurred from Yellowstone patients, none of which occurred in the Mammoth Hospital: Three occurred in the Livingston hospital, one a result of a car accident, another of a truck accident, and a third of heart failure. Outside of the hospital 7 deaths occurred in the park, two by drowning at the Old Faithful Pool, one by drowning at the Buffalo Ranch, one through a truck accident, one through drowning at Squaw Lake and two at their homes in Mammoth.

COOPERATING BUREAUS

The Bureau of Public Roads, U. S. Public Health Service, Bureau of Entomology, Bureau of Fisheries, Forest Service, Post Office and War Departments have all cooperated to the fullest extent with the officials of the National Park Service in Yellowstone during the fiscal year.

Weather Bureau. The activities of the Weather Bureau office in Yellowstone Park this year in charge of Charles L. Howard, Observer, have been a continuation of routine duties as in former years plus some new activity in snow research.

Routine duties include the taking and filing with the telegraph office of three daily weather observations. These reports are given country wide distribution over the Airways Teletype system as well as distribution to the Weather Bureau offices in the principal cities over the United States. The latter issue the Yellowstone report to their local press along with other representative reports so that Yellowstone Park weather is commonly published in leading newspapers.

Other routine work consists of compiling climatic data and the publication of a monthly summary of the several weather elements at Mammoth. In addition a less detailed but more widespread record is obtained of weather conditions over the park in cooperation with the Park Service.

The daily high and low temperatures and the precipitation are recorded daily at the more permanent ranger stations. This data is checked by the Weather Bureau and then published along with similar data for the State of Wyoming.

The snow research activities have been directed toward investigation of improved methods in anticipating spring run-off conditions and in forecasting the resulting stream-flow. An excellent study project has been set up in the past year with the aid of several government agencies.

The U.S.G.S. have taken the responsibility for accurate measurements of the discharge of water from three small basins in Yellowstone Park, which data is required in the snow research project. However, construction of these three stream measuring stations was made possible by the helpful cooperation of the Yellowstone Park Service officials, both in time, council on design, and in providing the material and CCC labor. Future upkeep rests with the Weather Bureau and U.S.G.S. The local Weather Bureau personnel have serviced the stream recorders throughout the past season.

The agricultural engineer in charge of snow surveying, who makes the seasonal forecasts for irrigation water supply, selected a location on each basin for a snow sample course. These snow samples are being taken by the Weather Bureau personnel much the same as the park rangers take them elsewhere over the park. Experimental snow gauges have been set up beside the snow sample courses and readings taken.

The objective of this study is to see how various methods work, and what practical ways there may be to improve stream-flow forecasts.

Bureau of Public Roads. The work accomplished by the Bureau of Public Roads on major highway improvement in Yellowstone Park during the fiscal year 1938 consisted almost wholly of the completion of contracts carried over from the previous fiscal years of 1936 and 1937. Only one project financed with 1938 funds was started during the late fall of 1937, and although funds were made available for one other grading project, it was not actually put under contract until toward the end of the fiscal year.

The major projects completed during the 1938 fiscal year included the following:

Fishing Bridge, Parking Area and Secondary Road. RTEC 1-E1, 5-D1, and part 5-D2.

Grand Loop, Lake Jct.-Canyon Jct., Surfacing. RTEC part 1-F1, F2.

East Entrance Approach Road, Section "A", Surfacing and Bridges.

Other projects which were under way but not completed during the year were:

Grand Loop, 1-C2 Parking Areas, 1-D1 Bridge and Tower Jct.-Cooke City 8-A3 Grading.

Grand Loop 1-D2 Grading (Isa Lake to West Thumb).

Grand Loop 1-B1 Gibbon River Bridges.

Approximately three quarter of a million dollars worth of work was accomplished and paid for on the above projects in fiscal year 1938. The projects involved construction of about 10 miles of grading work, 25 miles of base course surfacing and 12 major structures. The personnel employed on this work consisted of about 12 permanent engineers assisted by some 60 temporary engineering assistants, about 50 per cent of whom were temporary civil service appointees.

The completion of the Fishing Bridge together with adjacent parking and planting areas marks the improvement of an area which has long been inadequate, congested and hazardous for traffic. The bridge itself is entirely of log construction on a substructure of treated timber piling, and 5-foot sidewalks are provided on each side for fishermen. No particular construction difficulties were encountered other than extreme difficulty in obtaining the required 10-foot penetration in driving the piling. The formation under most of the stream bed consisted of a hard clay shale material which made driving of the 16-inch Port Orford cedar piling very slow, although most of them were provided with metal shoes.

The bridge proper which is 532 feet in length consisting of 19-28 foot spans, cost approximately \$100,000 or about \$188 per lineal foot. It furnished a 24-foot roadway with the two 5-foot sidewalks and an overall width of 42 feet. The entire contract including the parking areas and supplemental work totaled about \$140,000.

The completion of the base course surfacing of the 11-mile portion of the Grand Loop between Lake Junction and Canyon Junction also marks a much needed improvement, as this section of highway involves some of the worst sub-soil materials and conditions existing on the park highways and has for many years given much difficulty to traffic particularly during the early part of the season. Because of these poor subgrade conditions, a heavy course of telford stone reinforcement was used under the surfacing for much of the project and accounts largely for the apparent high cost of surfacing which amounted to about \$12,000 per mile or a total of about \$135,000 for the project. A light surface treatment was applied using a medium curing cut-back asphalt which will only temporarily furnish a dustless travelable surface as it is a very light penetration.

The base course surfacing of the 14-mile portion of the East Entrance approach road was constructed similar to that described for the foregoing project and a similar bituminous surface treatment was applied. In accordance with the provisions of the Act of January 31, 1931, amending the Act of April 9, 1924, to provide for National Park approach roads, this section of road was put under maintenance by government forces immediately following completion of construction.

In addition to the surfacing, eight bridges were constructed; two consisting of 2--100 foot concrete encased steel girder spans, two of 100 foot concrete encased steel girder spans, and 4--23 foot concrete deck slab bridges. Extensive channel construction and revetment work also was done in connection with the bridge construction. This total contract amounted to about \$350,000.

The next project which consisted of parking area and landscaping work in the vicinity of Old Faithful, the construction of a 60-foot concrete encased steel girder bridge over the Firehole River near Old Faithful, and the grading construction of about one mile of the Tower Junction-Cooke City road through the Lamar Canyon, was wholly completed during the 1937 season, but acceptance was not made pending the proving of the planted material.

The one mile of grading work which consisted principally of solid rock excavation was carried on to completion throughout the winter of 1936-37 and interference with the seasonal park traffic thus avoided. This improvement is now proving invaluable with the heavy increase in travel developing on this entrance route.

The total of this contract amounted to about \$230,000, of which about \$85,000 was for the grading of Lamar Canyon, about \$55,000 for the Firehole River bridge, and the balance of \$90,000 for trails, walks, and parking area improvements in the vicinity of Old Faithful. This latter included the planting of about 1,000 trees, some 3500 lineal feet of sidewalks and about 4000 lineal feet of stone curbing.

The Grand Loop grading project from Isa Lake to West Thumb eliminated the last section of one-way road on the grand loop. This contract totaled about \$360,000, and although only for a 26-foot width of roadbed, it involved some of the heaviest yardage per mile of any grading project on the grand loop. Exceptionally good progress was made on the construction throughout the season and one of the largest 30-day volumes of work ever performed on a Bureau highway contract in Yellowstone was turned out during this year on this job, a total of about \$95,000 during August, 1937.

The Grand Loop 1-B1 Bridge project consists of the construction of two bridges across the Gibbon River between Norris Junction and Madison Junction. These bridges are concrete girder type on stone masonry piers and abutments and are similar in design, each consisting of 3--35 foot spans. They replace old, light steel trusses which, in addition to being

unsightly, are dangerously weak for present day traffic and are only single lane structures.

In addition to the foregoing construction work, the Bureau during this year also made a location survey for a proposed relocation of a section of about 4 miles of the Grand Loop road in the vicinity of Canyon Junction, extending from Otter Creek to a point about $1\frac{1}{2}$ miles north of the Canyon Hotel. Preliminary plans for this revision, including a new crossing of Cascade Creek, were prepared during the winter of 1937-38 and further study and survey is continuing at this time on this project.

Also, as construction proceeded on the various projects, study and plans have been in progress looking toward further stage construction and improvement of the various partially completed projects, until at present base course surfacing or final bituminous surfacing plans could very promptly be furnished for practically any of the remaining routes to be so improved. Many preliminary plans and sketches have also been prepared for various parking areas and roadside trails which ultimately will be required at various locations along the highway system. Study and examination of bridge sites is also progressing and several major structure sites have been completely developed and preliminary plans for bridges completed, although several of the larger bridge problems still remain to be investigated and decided upon.

Post Office. Receipts for the post office at Yellowstone Park, Wyoming for the fiscal year ending June 30, 1938, show an 11 per cent increase over last year. It is also the best year in the history of the post office in the park.

We have found that the two star routes operating on both sides of the park that were put into effect last year give the best service to the tourists of any former routes.

The new post office building that was started in May, 1936, was practically completed by January 1, 1938. Mr. Coomer, the contractor, turned the building over to the custody of the Postmaster, C. W. Anthony, in January. At that time there were twenty-two items of omission and correction. These were completed in March when the exterior lights were installed. We moved from the old quarters to the new building on January 18, 1938. We held dedication of the building on January 17, 1938.

Miss Maxine Hansen, who was regular clerk in this office, was transferred to Washington, D. C. on July 15, 1937. Miss Marjorie Albertson, who was substitute clerk, was made regular clerk effective August 15, 1937. She resigned September 1, 1937 to take up her school work. Therefore, in order to establish a new register, an examination was held on October 16, 1937. There were twenty-five who took this examination and every one passed it. Miss Mary Capos was appointed substitute clerk December 15 and regular clerk on January 1, 1938.

MISCELLANEOUS

Deaths. Four persons were the victims of drowning in the park during the year, the first on July 7 when Wilfred Karls of Molt, Montana was drowned while swimming at the Old Faithful Pool and the second, on August 25, when Kenneth Chandler of West Yellowstone, Montana was drowned in the same pool. Fred W. Gonder of Livingston, Montana was drowned on August 29 while fishing in Soda Butte Creek, probably the victim of a heart attack, and James Walker was the first victim of the 1938 season when he was drowned while fishing in Squaw Creek on June 5. Auto and truck accidents were responsible for three deaths. Albert H. Curtin of Grand Island, Nebraska was killed when his truck turned over near Mud Geyser on July 7; Conrad Hreha, a Los Angeles policeman, was killed in an automobile accident between Lake and Thumb on August 2; and Joe Richards of Gardiner, Montana was killed when he backed his truck over an embankment while hauling dirt on August 3.

Robert Leroy (Pud) Robinson, son of Master Mechanic and Mrs. R. R. Robinson, Jr., accidentally killed himself by shooting on November 15, while Leroy Hill, his grandfather, died at the Robinson home of a heart attack on December 27. Park Ranger Judson M. Rhoads committed suicide by shooting himself at the West Yellowstone ranger station on January 9, and a son born to Park Ranger and Mrs. George Walker died at birth in the Park Hospital at Livingston on March 26.

Births. The park's population was increased by five during the year due to the new arrivals in the families of park employees. A son was born to Agent Cashier and Mrs. Fred G. Bussey in the Mammoth Hospital on August 9, a daughter to Park Ranger and Mrs. Walter Gammill in the Park Hospital in Livingston on October 8, a son to CCC Clerk and Mrs. Charles Wright at the Park Hospital in Livingston on January 1, and a son to CCC Foreman Roland Pray and wife at the Park Hospital in Livingston on January 8.

Marriages. Three Park Service employees were married during the year, the first Park Ranger Earl M. Semingsen to Miss Flora E. Best of Helena in Bozeman on September 9; ERA Clerk Carl A. Biever of Livingston, Montana to Miss Lillian Murray of Sheldon, Iowa in the Mammoth Chapel on November 25; and Mechanic Rufus Cramer to Miss Louise Nye of Livingston in Livingston on November 26.

Visitors. The list of distinguished visitors during the 1937 season included the President of the United States, Franklin D. Roosevelt and Mrs. Roosevelt; five United States Senators: Gerald P. Nye of North Dakota, Key Pittman of Nevada, Joseph C. O'Mahoney of Wyoming, James E. Murray of Montana, and James P. Pope of Idaho; ten members of the United States House of Representatives: James M. Fitzpatrick of New York, Emmet O'Neal of Kentucky, John M. Coffee of Washington, Hamilton Fish of New York, Monrad C. Wallgren of Washington, Paul R. Greever of Wyoming, Frank W. Towey of New Jersey, James W. Mott of Oregon, J. William Ditter of Pennsylvania, and

James F. O'Conner of Montana; the Governor of the State of Wyoming, Leslie A. Miller; Former President Herbert Hoover; Harry Colmery, National Commander of the American Legion; Judge Willis Van Devanter, retired Associate Justice, United States Supreme Court; Frederick Stanchfield, President, American Bar Association; and Jack Benny, popular radio and movie star. Other distinguished visitors during the 1937 season included: Whitney Seymour, Member, Board of Directors, American Civil Liberties Union; Mrs. Henry F. Pringle, Special Magazine Writer and Author; Mrs. Charles Walcott, noted botanist and wild flower artist; Major General T. Q. Ashburn, U. S. Army, President Inland Waterways Corporation; W. H. Jackson, pioneer photographer and member 1871 Hayden Survey Party; Gifford Pinchot, former governor of Pennsylvania; Henry S. Graves, Dean of Yale University School of Forestry; Arthur A. Shurcliff, Consulting Landscape Architect for John D. Rockefeller, Jr.; Kenneth Chorley, representative of Rockefeller Foundation; Dr. Wallace Krugler, prominent New York physician and conservationist; Miss J. Mildren Schwarz, Staff Writer for Fortune Magazine; Robert Edgren, noted sports cartoonist; Judge T. Blake Kennedy, U. S. District Judge, Cheyenne, Wyoming; L. R. MacGregor, Australian Trade Commission of Canada; Normal Sper, writer and radio broadcaster; Edward F. Colladay, President of the Board of Trade; Dr. Walter Robyns, Director, Belgian State Botanical Gardens at Brussels; Ivan Dmitri, well-known etcher and color photographer; Mrs. Carl Akeley, Adviser, Trustees' Committee on Akeley African Hall and African Collections, and explorer; and Col. E. W. Starling, Chief of the White House Secret Service.

Distinguished visitors during the 1938 season up to July 1 included Hon. Leslie A. Miller, Governor of Wyoming; Byron Scott, U. S. Congressman from California; Edwin Robinson, former International President and now International Director of Rotary International; T. R. Peace, Assistant Forest Pathologist, Imperial Forestry Institute, Oxford, England; Marcel Hugo Wipf, Agricultural Engineer, Neukirch-Egnach, Switzerland; Hon. Louis W. Strum, Judge of the United States District Court for the Southern District of Florida; and Harlean James, Executive Secretary of the American Planning & Civic Association.

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Prepared at the Western Museum Laboratories of
the National Park Service with assistance provided by
the Work Projects Administration — Official Project
No. 65-208-16, National Youth Administration and
Civilian Conservation Corps.

